

7. Fatima Al-Fihri, Mariam al-‘Asturlābiyya & Al-Kindī.

Fatima Al-Fihri.

Introduction:

Fāṭimah al-Fihri (800's AD) was a Muslim woman who is known as the founder of the world's oldest existing university, the University of al-Qarawiyyīn in Fez, Morocco. She is remembered as a pioneer in education and Islamic learning.

Full name, parent name:

Her full name was Fāṭimah bint Muḥammad al-Fihri al-Qurashīyah. She was the daughter of Muḥammad al-Fihri, a wealthy merchant originally from Qayrawān (in modern-day Tunisia). She was also called as Ummul Banin (the woman who founded the world's first university)

Early life & background:

Fāṭimah al-Fihri was born in Qayrawān and later moved with her family to Fez, Morocco, where her father became successful. After her father and husband passed away, she inherited a large fortune. Her exact birth year is unknown, but it is estimated to be in around 800–810 AD.

Personality:

She was known for her piety, generosity, and dedication to learning. Fāṭimah al-Fihri was a devout Sunni Muslim, most likely following the Maliki sect (maslak), since it was the dominant maslak (sect) in North Africa at the time. She used her wealth to serve her community and Islam.

In which caliphate:

She lived during the Idrīsī dynasty in Morocco, a time when Islamic culture and scholarship were spreading across North Africa. This was after the Abbasid Caliphate had expanded influence across the Muslim world.

His teacher; education & influences:

Details about her direct teachers are not well recorded, but she was influenced by the Islamic emphasis on knowledge, education, and charity. The culture of Fez, with its scholars and merchants, shaped her vision.

Career & historical context:

Fāṭimah al-Fihri dedicated her life and wealth to founding a great center of learning. In 859 AD, she established the Qarawiyyīn Mosque and University in Fez. This institution became one of the leading universities in the Muslim world, attracting students from Africa, Spain, and the Middle East.

Major work/books:

Her greatest achievement was not writing books but founding the University of al-Qarawiyyīn. Over time, it developed a vast library and curriculum covering Quran, law,

astronomy, grammar, mathematics, and natural sciences. It is recognized by UNESCO and Guinness World Records as the oldest continually operating university in the world.

The University of al-Qarawiyyīn in Fez, Morocco, has a long history of development:

- 1). 859 AD → founded by Fāṭimah al-Fihri as a mosque and madrasa (Qarawiyyīn Mosque).
- 2). 10th–11th centuries AD → expanded by the Idrīsī and later dynasties, adding more study halls and facilities.
- 3). 12th century AD → under the Almoravids and Almohads, the mosque-university was enlarged, and more subjects like grammar, medicine, mathematics, and astronomy were taught.
- 4). 14th century AD → the Marinid dynasty built libraries, added student housing, and strengthened its status as a great university.
- 5). Modern era (1963) → officially recognized by Morocco as a state university.
- 6). Today → UNESCO and Guinness World Records recognize it as the oldest continuously operating university in the world.

Contribution in modern science:

Through the Qarawiyyīn University, Fāṭimah al-Fihri contributed indirectly to science by creating a place where scholars studied mathematics, astronomy, medicine, and philosophy. Knowledge from her university spread into Europe during the middle Ages, helping to shape the European Renaissance.

Technic & thoughts:

Her approach was based on combining faith with knowledge. She believed wealth should be used for the benefit of society, especially for education and religion. Her vision was that education is a form of worship and service to Allah.

Death & legacy:

She died in Fez, Morocco, Her death year is uncertain, but she passed away around 859 AD, after the establishment of the University of al-Qarawiyyīn in 859 AD.

Her legacy continues through the University of al-Qarawiyyīn, which still operates today as a major center of Islamic learning. She is remembered as a role model for Muslim women and for the global pursuit of knowledge.

Critical/critics perspectives:

Some historians argue that details of her life are not fully clear due to limited sources, but the lasting existence of the Qarawiyyīn University proves her extraordinary contribution. Critics may question the extent of her direct involvement, yet she is universally admired for her generosity and vision.

Conclusion:

Fāṭimah al-Fihri was a devout Sunni Muslim woman, likely following the Maliki maslak (sect), whose dedication to faith and learning changed history. By founding the University of al-Qarawiyyīn, she left a legacy that continues to inspire the Muslim world and beyond.

Mariam al-Asturlābiyya

Introduction:

Mariam al-Asturlābiyya, also known as al-Ijliyyah, was a Muslim woman scientist and maker of astrolabes in the 10th century AD. She is one of the few known female scholars of the Islamic Golden Age, remembered for her skills in astronomy and instrument-making. An astrolabe is an ancient scientific instrument. It was used by astronomers, scientists, and travelers to: Measure the position of the sun, moon, planets and stars; Tell the time of day or night, Find the direction of Qibla (for Salah-prayer), Help in navigation and travel.

Full name, parent name:

Her full name was Mariam al-Ijliyyah al-Asturlābiyya. She was the daughter of an astrolabe maker, and her family name was 'al-'Ijliyyah' refers to her Arab tribal roots. Her father trained her in the art of making scientific instruments.

Early life & background:

Mariam al-Asturlābiyya was born in Aleppo, Syria, probably in the early 900s AD, during the Abbasid period. She grew up in Aleppo, Syria, during the Abbasid Caliphate period. From an early age, she learned about astronomy, mathematics, and instrument-making from her father. This environment helped her develop into a skilled scientist. Since she later worked for Sayf al-Dawla al-Hamadani (who ruled Aleppo from 944–967 AD), she must have been born before or during this time, most likely in the early-to-mid 900s AD.

Aleppo is a very old city in northern Syria. It lies between the Mediterranean Sea and the Euphrates River, making it an important center for trade and culture in history. Today, Aleppo is the second-largest city in Syria (after Damascus).

Personality:

Mariam was intelligent, precise and hardworking. She was deeply respected for her scientific skills at a time when few women were involved in science. While her exact Sunni or Shia identity is not recorded, she lived in a Sunni-majority region and is generally thought to have been Sunni.

In which caliphate:

She lived during the Abbasid Caliphate and worked under the Hamdanid dynasty in Aleppo, Syria, in the 10th century AD.

His teacher; education & influences:

Her main teacher was her father, who was an expert in making astrolabes. She also learned from other scientists of Aleppo and was influenced by earlier Muslim astronomers and Greek works translated into Arabic.

Career & historical context:

Mariam became famous in Aleppo as an astrolabe maker. Her work was highly valued by rulers and scholars. She was employed by Sayf al-Dawla, the ruler of Aleppo, who supported scholars and scientists at his court. This was a time when Islamic astronomy and mathematics were flourishing.

Major work/books:

Mariam did not write books that are known to us, but her major contribution was the practical designs and improvement of the astrolabe, a scientific instrument used to calculate time, measure the position of stars, and assist in navigation.

Contribution in modern science:

Her improvements in the astrolabe influenced the accuracy of astronomical observations and time-keeping. The astrolabe later became very important in both the Islamic world and Europe for astronomy, navigation, and prayer (Salah) calculations.

Technic & thoughts:

Mariam worked with precision and creativity. She built on earlier designs of the astrolabe and improved them to make them more useful for scientists and navigators. Her method showed careful observation and craftsmanship.

Death & legacy:

The exact year of her death is not known, but she lived in the 10th century AD. Her legacy is remembered as one of the few women who made a significant mark in the history of Islamic science. She is often celebrated today as a role model for women in STEM fields.

Critical/critics perspectives:

While she was praised for her skills, some critics may have overlooked her contributions simply because she was a woman in a male-dominated field. Modern historians, however, value her work as an important part of Islamic science.

Conclusion:

Mariam al-Asturlābiyya was a pioneering Muslim woman scientist of the Abbasid age. Though she did not leave behind books, her skill in making and improving astrolabes helped advance astronomy and navigation. She is believed to have been Sunni, and she remains a symbol of women's contributions to science in the Islamic Golden Age.

Abū Yūsuf Yaqūb ibn Ishāq al-Kindī

Introduction:

Abū Yūsuf Yaqūb ibn Ishāq al-Kindī (801–873 AD) was a famous Muslim philosopher, mathematician, physician, and scientist. He is often called the 'Philosopher of the Arabs' because of his major role in introducing Greek philosophy to the Islamic world.

Full name, parent name & full detail:

His full name was Abū Yūsuf Yaqūb ibn Ishāq ibn al-Ṣabbāḥ al-Kindī. He was born into a noble Arab family from the Kindah tribe. His father, Ishāq, was the governor of Kufa under the Abbasid Caliphate.

Early life & background:

Al-Kindī was born around 801 AD in Kufa, Iraq. He grew up in a wealthy and educated family, which gave him access to learning and libraries. Later, he moved to Baghdad, the intellectual capital of the Abbasid Caliphate.

Personality:

He was known for his intelligence, love of wisdom, and deep curiosity about all fields of knowledge. Al-Kindī was a Sunni Muslim, most likely following the Hanafi sect (maslak), which was common in Iraq at that time. He tried to balance philosophy with Islamic faith.

In which caliphate:

He lived during the Abbasid Caliphate, especially under Caliphs al-Mamūn and al-Mutaşim, who supported philosophy, science, and the translation movement.

His teacher; education & influences:

He studied in Kufa and Baghdad, learning from Arab and Persian scholars. He was strongly influenced by Greek philosophy, especially Aristotle and Plato, through translations. He also learned mathematics, medicine, and astronomy from scholars at the House of Wisdom.

Career & historical context:

Al-Kindī worked in Baghdad at the House of Wisdom, where Greek works were translated into Arabic. He wrote books on philosophy, logic, mathematics, astronomy, optics, medicine, music, and cryptography. He served as a court philosopher under Caliph al-Mamūn and later al-Mutaşim. His career reflects the peak of Abbasid intellectual life.

Major work/books:

Al-Kindī wrote over 260 works, though many are lost. Some of his famous books include 'First Philosophy,' where he tried to harmonize Greek philosophy with Islamic beliefs; 'the Use of the Indian Numerals,' which helped spread the decimal system; and works on optics, music theory, medicine, and geometry. He also wrote about astrology and chemistry, though with less accuracy.

1. First Philosophy (book) (Kitāb fī al-Falsafa al-Ūlā):

It is his most famous philosophical work. He tried to combine Greek philosophy (especially Aristotle) with Islamic belief. Discussed the nature of Allah, creation and knowledge.

2. The Use of the Indian Numerals (book) (Kitāb fī Istimāl al-Adad al-Hindī):

It introduced Indian numerals (which became “Arabic numerals”) to the Muslim world & helped spread the decimal number system that we use today.

3. Optics:

He wrote on work on light, vision, and reflection. Discussed how the eye sees, and how light interacts with objects. Influenced later scientists like Ibn al-Haytham.

4. Music:

He explained the mathematical basis of music & showed how sound, harmony, and rhythm can be studied scientifically.

5. Medicines and Drugs:

One of the earliest works in pharmacology. He explained how to measure the strength and effects of drugs using scientific methods.

6. Cryptography (Code Breaking):

He wrote about secret writing and codes also introduced frequency analysis, a method still used in modern code-breaking.

Contribution in modern science:

Al-Kindī helped introduce 'Indian numerals' (later known as Arabic numerals) to the Muslim world and Europe. He made contributions to cryptography, showing how to break codes using frequency analysis. In medicine, he studied the effects of drugs and wrote about how to test their strength scientifically.

Technic & thoughts:

He believed knowledge should combine reason and faith. His technique was logical analysis, influenced by Aristotle. He rejected superstition and tried to make philosophy serve religion. He also emphasized mathematics as a foundation of science.

Death & legacy:

Al-Kindī died around 873 AD in Baghdad. His works influenced later Muslim philosophers like al-Fārābī and Ibn Sīnā (Avicenna). In Europe, Latin translations of his works shaped medieval philosophy and science. He is remembered as the first true Muslim philosopher.

Critical/critics perspectives:

Some orthodox scholars criticized him for relying too much on Greek philosophy. However, many respected his efforts to balance philosophy with Islam. Modern historians praise him as a pioneer who introduced rational thought into the Islamic world.

Conclusion:

Al-Kindī was a Sunni Muslim scholar and philosopher, most likely linked with the Hanafi tradition. His wide-ranging works in philosophy, science, and mathematics made him one of the greatest minds of the Abbasid Golden Age. He is rightly remembered as the 'Philosopher of the Arabs.'